



DoD Technology Transfer Program Defense Industrial Base Seminar and Workshops

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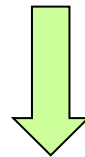
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Technology Transfer Policy

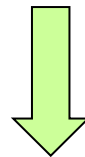
15 USC 3701-3715

Ensure Full Use of the Result of the Nation's Federal Investment in R&D



DoD Directive 5535.3

- Domestic Technology Transfer Activities are Integral Elements of DoD's National Security Mission
- Must have a high-priority role in all DoD Acquisition Programs



Technology Transfer Mechanisms

- Cooperative Research and Development Agreements (CRADAs)
- Patent License Agreements (PLAs)
- Educational Partnership Agreements (EPAs)
- State & Local Government Partnerships (incl Partnership Intermediaries)



Tech Transfer Program Motivation



- **Stimulate spin-off of DoD-technologies to private sector for product engineering and transition to products available for military acquisition.**
- **Integrating advanced commercial-sector technologies into DoD systems, particularly from non-traditional defense contractors through working with DoD funded Partnership Intermediaries, regional and local economic development authorities, and leveraging of SBIR.**
- **Establishing collaborative R&D projects with the private sector for cost-sharing of new dual-use technology development.**
- **Meeting statutory mandate to leverage federal R&D investment**



Technology Transfer Relationships

Execution

Service & Agency RDT&E Centers

- Scientists & Engineers
- Technology Transfer Managers
- Intellectual Property Attorneys

DTIC - hosted Systems

- Defense Tech Transfer Information System
- IP Management Information System

DoD / Federal Working Groups

- Federal Laboratory Consortium for Tech Transfer
- Interagency Working Group for Tech Transfer
- DoD Tech Transfer Integrated Project Team
- Defense Tech Transfer Working Group
- 1401 Working Group

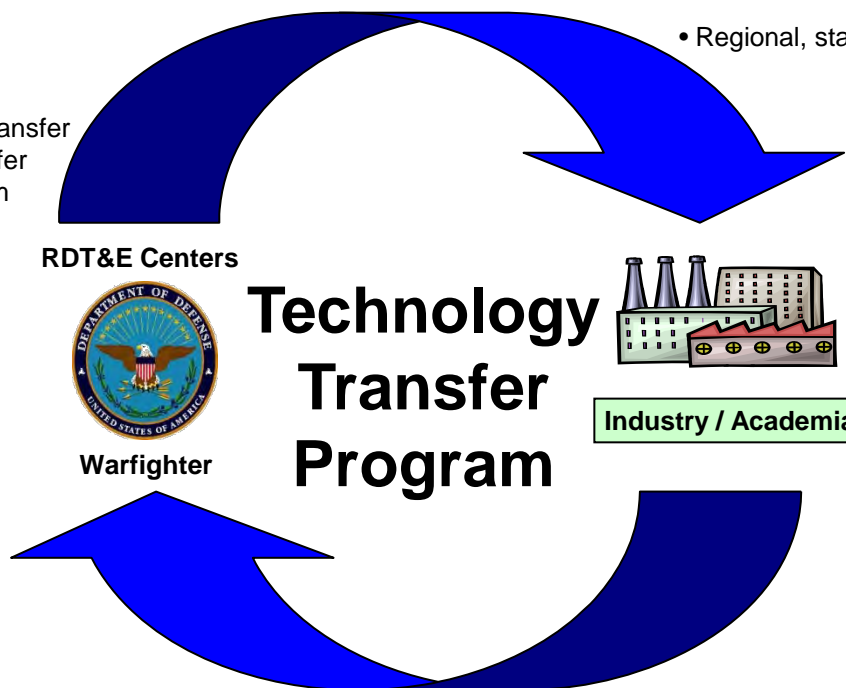
Facilitation

DoD & Non-DoD Funded Assistance

- DoD-wide Partnership Intermediaries
 - TechLink
 - FirstLink
 - SpringBoard
 - T2Bridge
 - TechMatch
 - MilTech
- DoD / Department of Commerce MOU
- Regional, state, local economic development organizations

Related DoD Programs

- SBIR / STTR
 - ManTech
 - DACP
 - IR&D
 - TTI



Acquisition

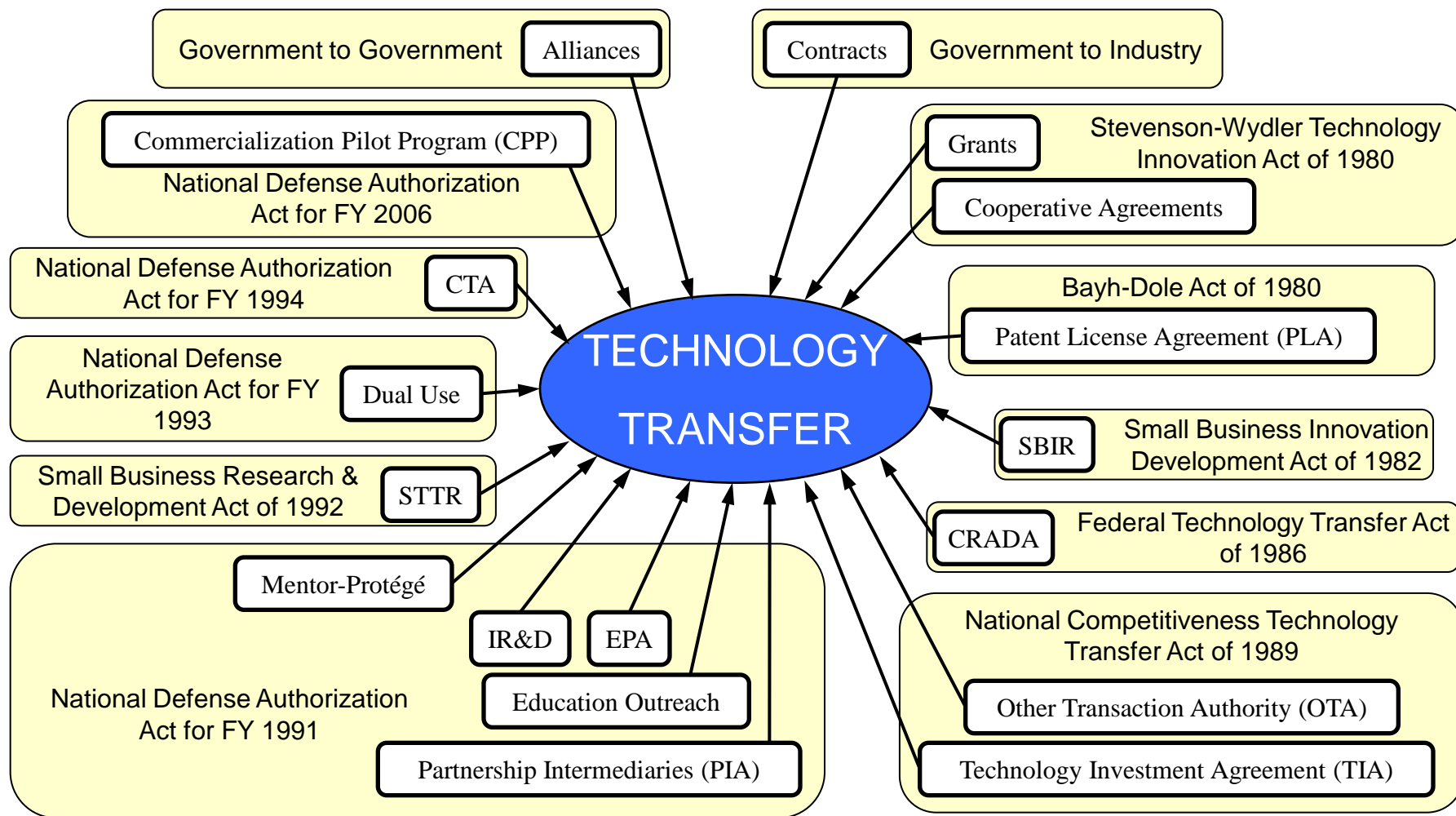
Products & Services

- Industry partner further develops the technology, commercializes, and manufactures a product that is available for procurement and sustainment by the program of record for the Warfighter

Technology Transfer (T2) is the intentional communication of knowledge, expertise, facilities and equipment, and other resources for application to military and non-military systems. It includes spin on, spin off, and dual use.



Technology Transfer Mechanisms





What is a CRADA?

Cooperative Research and Development Agreement

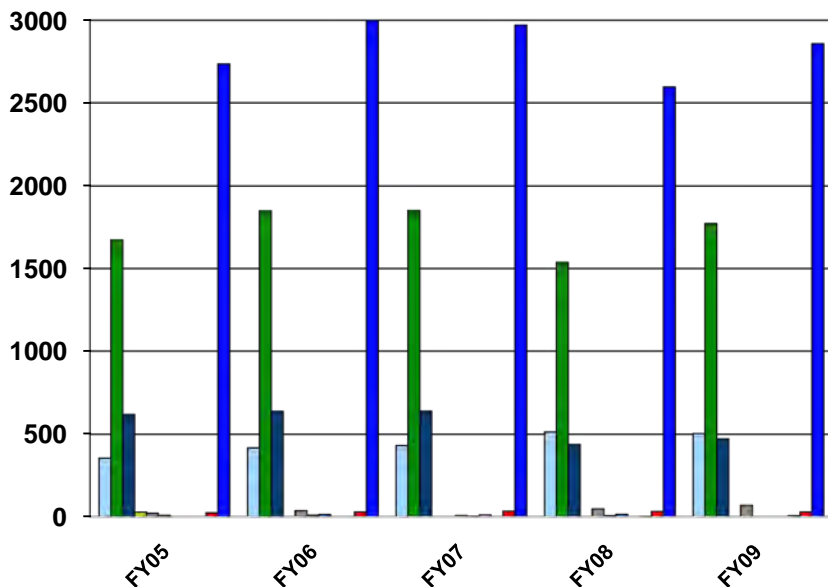


- **CRADAs allow:**

- Federal lab to accept, retain, & use funds, personnel, services & property from partner
- Federal lab to **provide personnel, services, & use of property**
- Granting of patent licenses or options w/retention of government use
- Waiving of rights to inventions except for government use
- Former employees to participate in efforts to commercialize inventions
- **Nonfederal partner may choose an exclusive license** for a prenegotiated field of use for any invention under the agreement



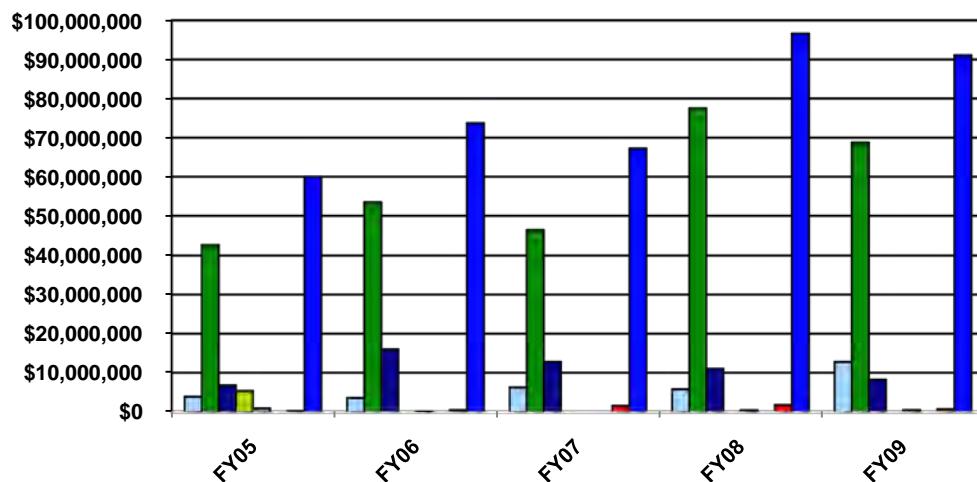
CRADAs & CRADA Income



FY2009

Active – 2,869

New – 659



FY2009

Income - \$91.598M



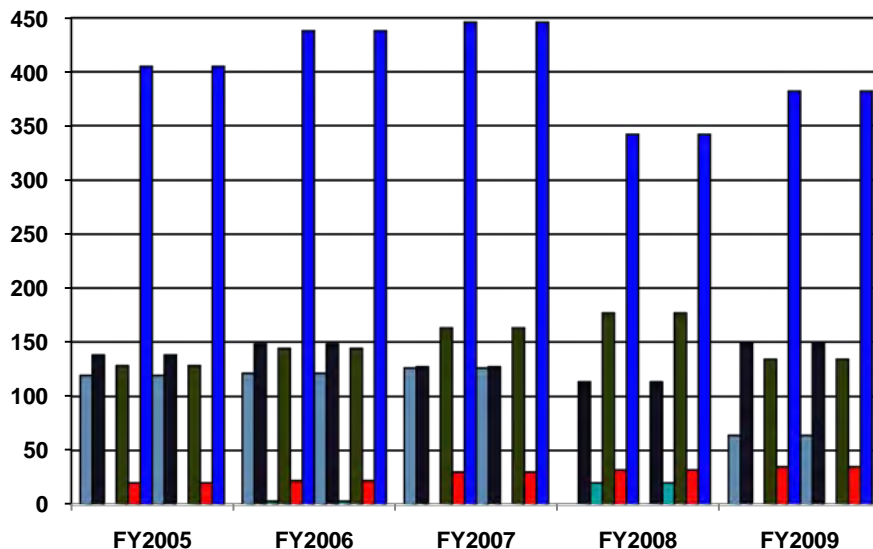
What is a Patent License Agreement (PLA)?



- **An agreement by the patent owner permitting a licensee to practice the patented invention in return for some valuable consideration. Government considerations**
 - Can be exclusive or nonexclusive, for a specific field of use, for a special geographical area, U.S. or foreign usage (U.S. patent only effective in the U.S.)
 - Preference for U.S. industry and small business
 - Licensee must present plans to commercialize the invention
 - Government retains a nonexclusive, royalty-free worldwide Government purpose license to the invention.



Patent Licenses & Royalty Income



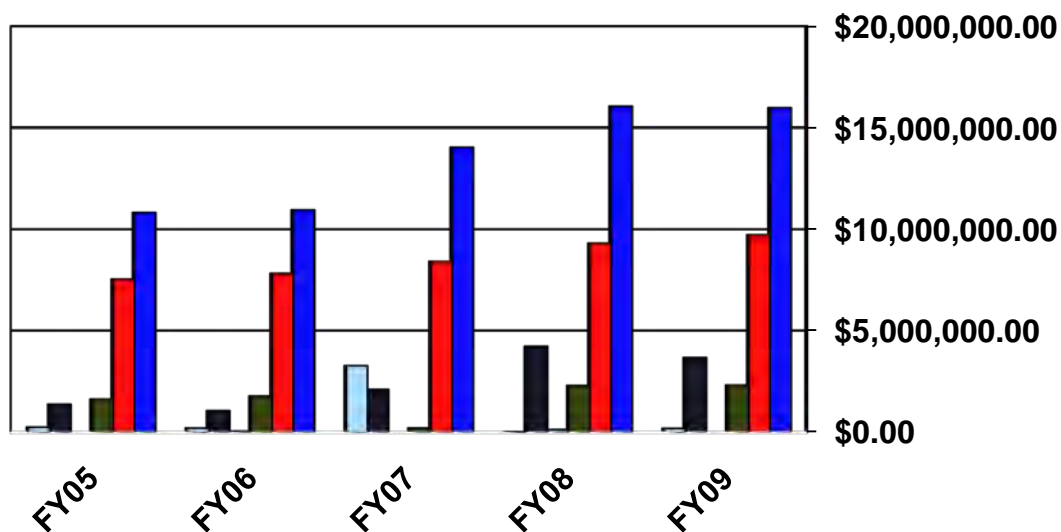
FY2009

Active – 389

New – 57

Income Bearing – 193

Royalty Bearing – 227



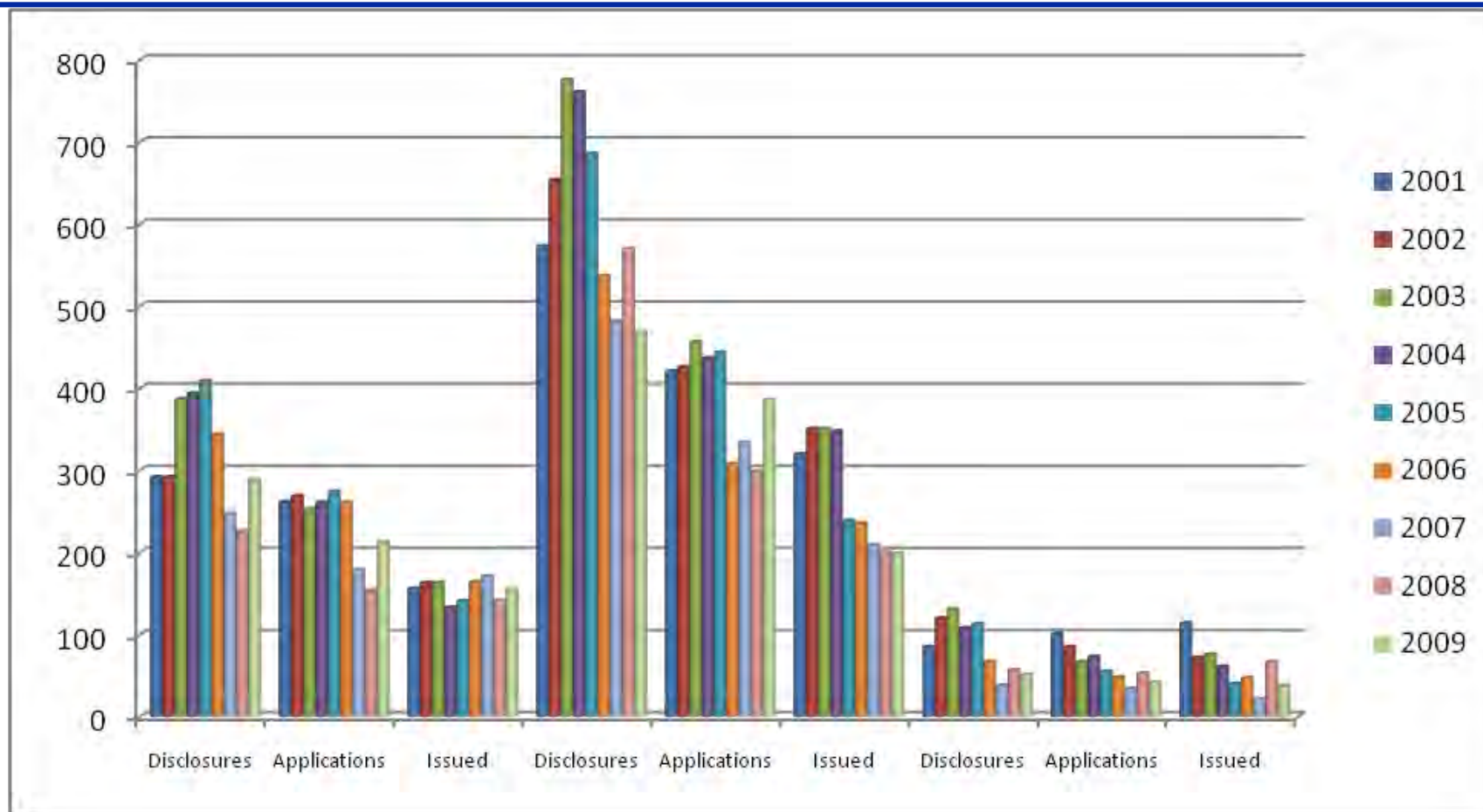
FY2009

License Income – \$16.165M





Patent Trends



ARMY

NAVY

AIR FORCE

FY2009 – Disclosures – 831

Applications – 690

Issued – 404



Partnership Intermediaries



- Provide skill & capabilities not resident in DoD labs:
 - **To LABS**
 - Proactive, focused, and sustained marketing of lab technologies and capabilities
 - Pursue leads
 - Closer to the marketplace and can employ a technology pull approach
 - Facilitate communications with companies
 - **To PARTNERS**
 - Help find technology solutions or new product opportunities
 - Make government “red tape” invisible
 - **To BOTH**
 - conduct market research to establish value of licensable technologies
 - understand expectations
 - develop viable license applications and commercialization plans





Tech Transfer Initiatives

DoD Tech Transfer Integrated Planning Team (TTIPT) Workshop

A 3 ½ day roll-up-your-sleeves workshop for DoD's technology transfer and intellectual property attorney professionals for training, program awareness, and best practices dialogue.

DoD Intellectual Property Management Information System (IPMIS)

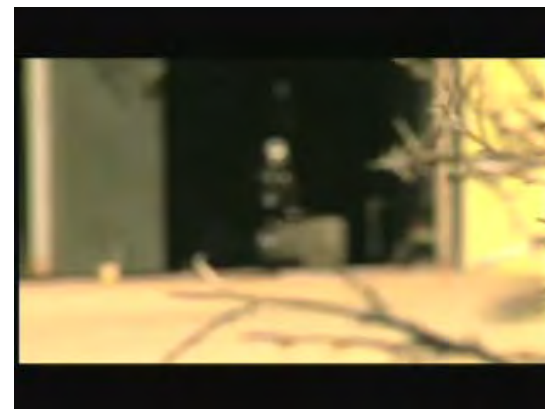
DoD-wide system to provide the capability to identify, manage, and leverage DoD's intellectual property processes and licensing information.

National, Regional, and Local Technology Outreach Events

Presenting DoD laboratory technologies, capabilities and collaborative research and development opportunities to industry

Hot Technologies Contest

Targeted 3 to 5 minute videos highlighting DoD technologies available for licensing.





Public-Private Partnerships

Public-private partnership (PPP) describes a government service or private business venture which is funded and operated through a partnership of government and one or more private sector companies.



Purpose – The Radio Frequency (RF) Alliance is set up to bridge the gap between RF technology and operational requirements

Key Partners – Purdue University, NAVSEA Crane, Industry



Purpose – Bring remote sensor and CBRNE sensor technologies to market.

Key Partners – 3 Ohio Universities, AFRL, Industry, and Ohio State and Local economic development authorities



Purpose – Co-located with Benet Labs. Its mission is to serve as an economic development agent that offers office, light industrial and laboratory space for industry.

Key Partners – Benet Labs, Industry



Tech Transfer Benefits to DoD



- **Expands capabilities**
 - DoD / private sector S&E collaboration
 - Fuller use of facilities & equipment with industry reimbursement
- **Reduces program cost and schedule through**
 - Collaborate on Research
 - Private funded R&D in areas of mutual interest
- **Leverage Federal investment in R&D**
 - Technology developed for DoD enables product development by industry for commercial and/or military use.



Technology Transfer Outcomes



Some examples of technology transfer successes that lead to transition of technology to market ready-state for military acquisition and deployment



Army Wound Trainer

Field Expedient Bleeding Simulation System (FEBSS)

Objective: Improved medic training for soldiers, and civilian responders for traumatic, bleeding wound treatment in the field

Benefits:

- Realism addresses the sight of blood with multiple concurrent wounds of varied types
- Suited to retrofit existing training mannequins
- Simple, portable, and inexpensive to operate

Participants:

- 68W School Ft. Carson, CO
- ORTA: Paul Mele and Sara Miller, Army Medical Research and Materiel Command
- Inventor: Sgt. Lynn Randall King, 91W Command
- SKEDCO Inc., Tualatin OR, licensee
- FirstLink (Pittsburgh Gateways Corp.) provided partner evaluation support and facilitation of Material Transfer CRADA and pending license agreement

Status: After upgrades in early 2008, commercial units have been purchased by numerous military and civilian users in the U.S. and abroad.

Technology:

A system of pumps, tubing, clamps and remote control units to simulate bleeding with a mannequin or integrated into body-worn suits.

Simulated blood flow mimics one or more arterial or venal wounds.

Army Prototypes

Mannequin



Suit for body wear



Contact: FirstLink (888) 802-0380 info@dodfirstlink.com



Fuels Technology

Objective:

- SECAF goal is for all AF systems to use 50/50 blend of conventional & Fischer-Tropsch (synthetic) JP-8 by 2010.
- Another goal is 50% of jet fuel usage being synthetic fuels by FY16

Benefits:

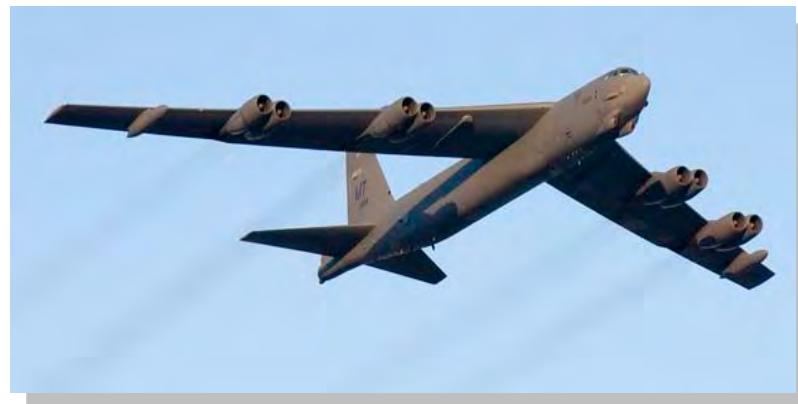
- Alternative fuel use by DoD vehicles increases energy security, reduces price volatility, and eventually reduces fuel costs.
- Transition to the airline industry through the Commercial Alternative Aviation Fuel Initiative

Status:

- AFRL supplying extensive fuel property evaluations to the Alternative Fuel Certification Office (ASC).
- Continuing to support "biojet" development.
- CRADA (05-087-PR-01) tested six biodiesel fuels in a T63 helicopter engine in the Engine Environment Research Facility (EERF) and measured emissions.
- Present CRADA (02-347-PR-01) is testing advanced fuels, fuel additives, and fuel system components.
- Extensive collaborations with alternative fuel manufacturers, engine OEMs, weapon system contractors, and component suppliers

Technology:

- The JP-8+100LT program (ATD) successfully transitioned a low-temp fuel additive to the U-2 and Global Hawk
- Fischer-Tropsch/JP-8 fuel blend successfully flown on the B-52 (Dec 06) and C-17 (Oct 07)
- Improved fuel system icing inhibitor additive scheduled for flight testing in early 2008



Contact Info:

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Trivalent Chromium Processes (TCP)

Objective: Transfer and Transition innovative anticorrosive coating technology for military and private applications.

Benefits:

- Replaces toxic hexavalent chromium
- Environmentally friendly
- Reduction in worker exposure to carcinogenic materials

Technology: TCP is an anti-corrosion passivation coating for light metals that provides excellent appearance, wear, and corrosion resistance.

Applications: Aluminum, steel, and other alloys

Industries: Automotive, aircraft, hardware, computers, construction materials

Status: 4 Non-Exclusive U.S. Market Licenses and one Foreign exclusive license totaling over \$9M in sales.

DoD Equipment applications include Navy F/A-18, Marine Corps CH-53, AH-1, AV-8B, AH-64, and Expeditionary Fighting Vehicle; Army Bradley Fighting Vehicle, AH-60, H-47, H-58, H-64, and Future combat Systems

Boeing, United Technologies, Lockheed-Martin and others are evaluating TCP for possible use on new naval aircraft and many other DoD systems.





Contact



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